

Exercise walk-through

Heart ■ 9.2

eXercise

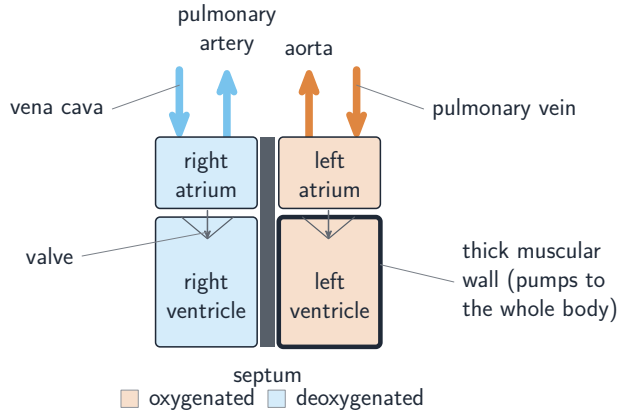
You must be able to

- name the chambers and the role of the septum and valves
- explain why the left ventricle wall is thickest
- give the risk factors for coronary heart disease

Method — Heart structure

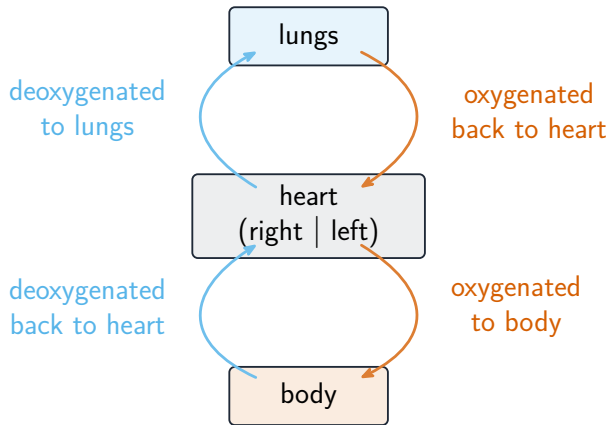
- **atria** (upper, thin) push blood to the **ventricles** (lower); the **septum** keeps the two sides apart.
- valves stop blood flowing backwards; coronary arteries feed the heart muscle.

Method — Heart structure



The heart's four chambers, with the thickest left-ventricle wall

Method — Heart structure



The heart drives two circuits of blood

Practice 2.1 ■ 2 marks

Name the upper and lower chambers of the heart.

Solution 2.1

Method: Heart structure

Worked steps

upper: atria; lower: ventricles **B1** **B1**.

Practice 2.2 ■ 1 mark

State the role of the septum.

Solution 2.2

Worked steps

it keeps oxygenated and deoxygenated blood apart (so they do not mix) **B1**.

Exam-style 3.1 ■ 1 mark

The wall of the left ventricle is thicker than the right because it:

- A** pumps blood only to the lungs
- B** pumps blood to the whole body
- C** holds more blood
- D** has no valves

Solution 3.1

Method: Heart structure

A pumps blood only to the lungs

B pumps blood to the whole body



C holds more blood

D has no valves

Worked steps

B. The left ventricle pumps blood to the whole body, so its wall is thickest.

Exam-style 3.2 ■ 2 marks

During exercise the heart rate increases.

- (a) Explain why this is needed.
- (b) State two risk factors for coronary heart disease.

Solution 3.2

Method: Heart structure

Worked steps

- (a) the muscles need more oxygen and glucose during exercise **M1**; a faster heart rate delivers blood (and these) to them faster **A1**.
- (b) any two of: high-fat diet; lack of exercise; smoking; stress; genetics/age **B1** **B1**.